

composites

Published by Butterworth-Heinemann Ltd

Index to volume 24 (1993)

Number 1 pp 1-64
Number 2 pp 65-184
Number 3 pp 185-296
Number 4 pp 297-376

Number 5 pp 377-456
Number 6 pp 457-528
Number 7 pp 529-600
Number 8 pp 601-672

Article index

Number 1

- Some further considerations of the theory of fibre debonding and pull-out from an elastic matrix. Part 1: Constant interfacial frictional shear stress
S.Y. Fu, B.L. Zhou, X. Chen, C.F. Xu, G.H. He and C.W. Lung 5
- Some further considerations of the theory of fibre debonding and pull-out from an elastic matrix. Part 2: Non-constant interfacial frictional shear stress
S.Y. Fu, B.L. Zhou, X. Chen, G.H. He and C.W. Lung 13
- Hybrid composites based on polyethylene and carbon fibres. Part 6: Tensile and fatigue behaviour
A.A.J.M. Peijs and J.M.M. de Kok 19
- Concrete reinforced with up to 0.2 vol% of short carbon fibres
Pu-Woei Chen and D.D.L. Chung 33
- Designer's corner
Should fibrous composite failure modes be interacted or superimposed?
L.J. Hart-Smith 53

Number 2

- The full-cell cracking mode in unidirectional brittle-matrix composites
N.J. Pagano and H.W. Brown III 69
- The prediction of cracking in biaxially loaded cross-ply laminates having brittle matrices
L.N. McCartney 84
- Asymptotic analysis of crack bridging by ductile fibres
J.R. Willis 93
- Ultimate strengths of fibre-reinforced ceramics and metals
W.A. Curtin 98
- The interpretation of data from the four-point bend delamination test to measure interfacial fracture toughness

S.J. Howard, A.J. Phillips and T.W. Clyne 103

A micromechanics-based strength prediction methodology for notched metal-matrix composites

C.A. Bigelow 113

Micromodelling of effective stress intensities for bridged cracks in fibre-reinforced titanium metal-matrix composites

D.C. Cardona, C. Barney and P. Bowen 122

Micromechanical analysis of damage mechanisms in ceramic-matrix composites during mechanical and thermal cycling

B.F. Sørensen, R. Talreja and O.T. Sørensen 129

Characterization of damage onset in glass-ceramic matrix composite angle-ply laminates

C.M.A. Davies, B. Harris and R.G. Cooke 141

Fracture and fatigue of a Nicalon/CAS continuous fibre-reinforced glass-ceramic matrix composite

R.F. Allen, C.J. Beevers and P. Bowen 150

Fatigue damage in SiC/CAS composites

F.A. Habib, R.A.J. Taylor, R.G. Cooke and B. Harris 157

The correlation of interfacial and macroscopic toughness in SiC laminates

A.J. Philipps, W.J. Clegg and T.W. Clyne 166

Fracture toughness assessment of silicon carbide-based ceramics and particulate-reinforced composites

R.L. Brett and P. Bowen 177

Number 3

Damage development in titanium metal-matrix composites subjected to cyclic loading

W.S. Johnson 187

Damage mechanisms under tensile and fatigue loading of continuous fibre-reinforced metal-matrix composites

K. Schulte and K. Minoshima 197

Damage in aligned-fibre SiC/Al quantified using a laboratory X-ray tomographic microscope

T.M. Breunig, S.R. Stock, A. Guvenilir, J.C. Elliott, P. Anderson and G.R. Davis 209

Fatigue crack growth in a fibre-reinforced titanium MMC at ambient and elevated temperatures

P.J. Cotterill and P. Bowen 214

Reaction-induced changes in interfacial and macroscopic mechanical properties of SiC monofilament-reinforced titanium

M.C. Watson and T.W. Clyne 222

Fatigue crack propagation in SiC continuous fibre-reinforced Ti-6Al-4V alloy metal-matrix composites

C. Barney, C.J. Beevers and P. Bowen 229

The bending fatigue behaviour of unidirectionally reinforced SCS6/Ti-15-3

I. Greaves, J.R. Yates and H.V. Atkinson 235

Damage assessment and lifing of continuous fibre-reinforced metal-matrix composites

A.R. Ibbotson, C.J. Beevers and P. Bowen 241

Fatigue and fracture toughness of aluminium alloys reinforced with SiC and alumina particles

D.L. Davidson 248

Effects of reinforcement content and shape on cavitation and failure in metal-matrix composites

A.F. Whitehouse and T.W. Clyne 256

Microstructural influences on fatigue crack initiation in a model particulate-reinforced aluminium alloy MMC

D.A. Lukasak and D.A. Koss 262

Mechanical properties of aluminium-based particulate metal-matrix composites

T.J.A. Doel, M.H. Loretto and P. Bowen 270

The effect of microstructure on the

- fracture toughness of a metal-matrix composite
T.J. Downes and J.E. King 276
 Fatigue damage development in Al_2O_3 /Al composite
Xi Cong Liu and C. Bathias 282
 Fatigue behaviour of a Saffil-reinforced aluminium alloy (AA6061)
A. Levin and B. Karlsson 288

Number 4

- Water jet and abrasive water jet cutting of unidirectional graphite/epoxy composite
M. Ramulu and D. Arola 299
 The development of fatigue damage around fastener holes in thick graphite/epoxy composite laminates
D.S. Saunders, S.C. Galea and G.K. Deirmendjian 309
 Effect of strain rate and specimen geometry on the compressive strength of woven glass-reinforced epoxy laminates
J. Harding 323
 A model for the reduction in compression strength of continuous fibre composites after impact damage
F.J. Guild, P.J. Hogg and J.C. Pritchard 333
 Effect of impact perforation load on GFRP composites
A.M. El-Habak 341
 Effect of different matrices on wear characteristics of glass woven roving/polymer composites
B. Vishwanath, A.P. Verma, C.V.S.K. Rao and R.K. Gupta 347
 A fundamental model for prediction of optimal particulate composite properties
A. Sidess, Y. Holdengraber and A. Buchman 355
 Designer's corner
 Design and cost viability of composites in commercial aircraft
J.E. McCarty 361

Number 5

- A review of recent research in the former Soviet Union on fibrous composites
R.P. Dickenson and M.R. Hill 379
 Microstructural image analysis applied to fibre composite materials: a review
F.J. Guild and J. Summerscales 383
 A review of multiaxial/biaxial loading tests for composite materials
A.S. Chen and F.L. Matthews 395
 Indentation of laminated filament-wound composite tubes
S. Li, P.D. Soden, S.R. Reid and M.J. Hinton 407
 The mechanical properties of non-crimped fabric-based composites
P.J. Hogg, A. Ahmadnia and F.J. Guild 423
 A new superhybrid composite material: Vinylon-reinforced aluminium laminate (VIRALL)

- Sui Guoxin, Zhou Benlian, Zheng Zongguang, Zhou Chengti and Shi Changxu* 433

Short communication

- Mechanical properties of squeeze-cast zinc alloy matrix composites containing α -alumina fibres
H.X. Zhu and S.K. Liu 437
 Research report
 Fatigue resistance of impact damaged specimens vs. machined hole specimens
A.J. Lauder, M.F. Amateau and R.A. Queeney 443
 Designer's corner
 Composite sandwich construction with syntactic foam core. A practical assessment of post-impact damage and residual strength
C. Hiel, D. Dittman and O. Ishai 447

Number 6

- Interfacial shear stress distribution in model composites: the effect of fibre modulus
N. Melanitis, C. Galiotis, P.L. Tetlow and C.K.L. Davies 459
 A combined stress-based and fracture-mechanics-based model for predicting delamination in composites
Weicheng Cui and M.R. Wisnom 467
 Strength and failure modes of bonded single lap joints between cross-ply adherends
K.C. Kairouz and F.L. Matthews 475
 Drop-weight impact damage tolerance of CFRP with rubber-modified epoxy matrix
Jang-Kyo Kim, D.B. Mackay and Yiu-Wing Mai 485
 Effect of rubber particle clustering in composite toughening—model systems study
H.-J. Sue, E.I. Garcia-Meitin and P.C. Yang 495
 Composite reinforcement of a ship superstructure—project overview
I. Grabovac, R.A. Bartholomeusz and A.A. Baker 501
 Reinforcement of the F-111 wing pivot fitting with a boron/epoxy doubler system—materials engineering aspects
A.A. Baker, R.J. Chester, M.J. Davis, J.D. Roberts and J.A. Retchford 511
 Designer's corner
 An inherent fallacy in composite interaction failure curves
L.J. Hart-Smith 523

Number 7

- The experimental behaviour of bolted joints in pultruded glass/polyester material. Part 1: Single-bolt joints
S.F.M. Abd-El-Naby and L. Hollaway 531
 The experimental behaviour of bolted

- joints in pultruded glass/polyester material. Part 2: Two-bolt joints
S.F.M. Abd-El-Naby and L. Hollaway 539

Hygrothermal ageing effects on the static fatigue of glass/epoxy composites

- A. Chateauminois, B. Chabert, J.P. Soulier and L. Vincent* 547
 Interlaminar fracture of commingled-fabric-based GF/PET composites
L. Ye and K. Friedrich 557
 Manufacture and compression properties of syntactic foams
P. Bunn and J.T. Mottram 565
 Effect of carbon fibre surface on interfacial adhesive strengths in CFRP
Y. Sawada, Y. Nakanishi and T. Fukuda 573
 Fracture analysis of the transition zone between unreinforced alloy and composite
J. Goñi, A. Muñoz, J.L. Viviente and J.F. Liceaga 581
 Designer's corner
 The truncated maximum strain composite failure model
L.J. Hart-Smith 587

Number 8

- Surface preparation of titanium for vacuum plasma spraying and its effect on substrate/coating interfacial fracture toughness
S.J. Howard and T.W. Clyne 603
 Speckle interferometry for analysing anisotropic thermal expansion—application to specimens and components
P. Aswendt and R. Höfling 611
 An oblique end-tab design for testing off-axis composite specimens
C.T. Sun and Il-sup Chung 619
 The use of elevated temperature in the structural testing of FRP components for simulating the effects of hot and wet environmental exposure
T.A. Collings, R.J. Harvey and A.W. Dalziel 625
 Fibre strain mapping in aramid/epoxy microcomposites
K.M. Atallah and C. Galiotis 635
 The fracture behaviour of short glass fibre-reinforced polyoxymethylene
P.J. Hine, R.A. Duckett and I.M. Ward 643
 Modelling weave and stacking configuration effects on interlaminar shear stresses in fabric laminates
S.W. Yurgartis and J.P. Maurer 651
 Short communication
 On the use of Levy's method for symmetrically laminated composite plates
S. Abrate 659

Author index

- Abd-El-Naby, S.F.M. 531, 539
 Abrate, S. 659

- Ahmadnia, A. 423
 Allen, R.F. 150
 Amateau, M.F. 443
 Anderson, P. 209
 Arola, D. 299
 Aswendt, P. 611
 Atallah, K.M. 635
 Atkinson, H.V. 235
- Baker, A.A. 501, 511
 Barney, C. 122, 229
 Bartholomeusz, R.A. 501
 Bathias, C. 282
 Beevers, C.J. 150, 229, 241
 Benlian, Z. 433
 Bigelow, C.A. 11
 Bowen, P. 122, 150, 177, 214, 229, 241, 270
 Brett, R.L. 177
 Breunig, T.M. 209
 Brown III, H.W. 69
 Buchman, A. 355
 Bunn, P. 565
- Cardona, D.C. 122
 Chabert, B. 547
 Changxu, S. 433
 Chateauminois, A. 547
 Chen, A.S. 395
 Chen, P.-W. 33
 Chen, X. 5, 13
 Chengti, Z. 433
 Chester, R.J. 511
 Chung, D.D.L. 33
 Chung, I. 619
 Clegg, W.J. 166
 Clyne, T.W. 103, 166, 222, 256, 603
 Collings, T.A. 625
 Cooke, R.G. 141, 157
 Cotterill, P.J. 214
 Cui, W. 467
 Curtin, W.A. 98
- Dalziel, A.W. 625
 Davidson, D.L. 248
 Davies, C.K.L. 459
 Davies, C.M.A. 141
 Davis, G.R. 209
 Davis, M.J. 511
 De Kok, J.M.M. 19
 Deirmendjian, G.K. 309
 Dickenson, R.P. 379
 Dittman, D. 447
 Doel, T.J.A. 270
 Downes, T.J. 276
 Duckett, R.A. 643
- El-Habak, A.M. 341
 Elliott, J.C. 209
- Friedrick, K. 557
 Fu, S.Y. 5, 13
 Fukuda, T. 573
- Galea, S.C. 309
 Galiotis, C. 459, 635
 Garcia-Meitin, E.I. 495
 Goñi, J. 581
 Grabovac, I. 501
 Greaves, I. 235
- Guild, F.J. 333, 383, 423
 Guoxin, S. 433
 Gupta, R.K. 347
 Guvenilir, A. 209
- Habib, F.A. 157
 Harding, J. 323
 Harris, B. 141, 157
 Hart-Smith, L.J. 53, 523, 587
 Harvey, R.J. 625
 He, G.H. 5, 13
 Hiel, C. 447
 Hill, M.R. 379
 Hine, P.J. 643
 Hinton, M.J. 407
 Höfling, R. 611
 Hogg, P.J. 333, 423
 Holdengraber, Y. 355
 Hollaway, L. 531, 539
 Howard, S.J. 103, 603
- Ibbotson, A.R. 241
 Ishai, O. 447
- Johnson, W.S. 187
- Kairouz, K.C. 475
 Karlsson, B. 288
 Kim, J.-K. 457
 King, J.E. 276
 Koss, D.A. 262
- Lauder, A.J. 443
 Levin, M. 288
 Li, S. 407
 Liceaga, J.F. 581
 Liu, S.K. 437
 Liu, Xie Cong 282
 Loretto, M.H. 270
 Lukasak, D.A. 262
 Lung, C.W. 5, 13
- Mackay, D.B. 457
 Mai, Y.-W. 457
 Matthews, F.L. 395, 475
 Maurer, J.P. 651
 McCartney, L.N. 84
 McCarty, J.E. 361
 Melanitis, N. 459
 Minoshima, K. 197
 Mottram, J.T. 565
 Muñoz, A. 581
- Nakanishi, Y. 573
- Pagano, N.J. 69
 Peijs, A.A.J.M. 19
 Philipps, A.J. 103, 166
 Prichard, J.C. 333
- Queeney, R.A. 443
- Ramulu, M. 299
 Rao, C.V.S.K. 347
 Reid, S.R. 407
 Retchford, J.A. 511
 Roberts, J.D. 511
- Saunders, D.S. 309
 Sawada, Y. 573
 Schulte, K. 197
- Sidess, A. 355
 Soden, P.D. 407
 Sørensen, B.F. 129
 Sørensen, O.T. 129
 Soulier, J.P. 547
 Stock, S.R. 209
 Sue, H.-J. 495
 Summerscales, J. 383
 Sun, C.T. 619
- Talreja, R. 129
 Taylor, R.A.J. 157
 Tetlow, P.L. 459
- Verma, A.P. 347
 Vincent, L. 547
 Vishwanath, B. 347
 Viviente, J.L. 581
- Ward, I.M. 643
 Watson, M.C. 222
 Whitehouse, A.F. 256
 Willis, J.R. 93
 Wisnon, M.R. 467
- Xu, C.F. 5
- Yang, P.C. 495
 Yates, J.R. 235
 Ye, L. 557
 Yurgartis, S.W. 651
- Zhou, B.L. 5, 13
 Zhu, H.X. 437
 Zongguang, Z. 433

Keyword index

Abrasive water jet cutting

Water jet cutting, Surface roughness 299

Active surface area ratio

Carbon fibres, Surface properties 573

Adhesive-bonded joints

Modes of failure, Cross-ply adherends 475

Adhesive bonding

Ship superstructure, Composite reinforcement 501
 Aircraft wing structure, Composite reinforcement 511

Aircraft wing structure

Composite reinforcement, Adhesive bonding 511

Aluminium matrix

Metal-matrix composites, Ceramic fibres 197

Angle-ply laminates

Glass-ceramic matrix composites, Fibre orientation 141

Applied strain

Interfacial shear stress, Fibre debonded length 459

Automatic image analysis

Fibre composites, Microstructure definition 383

Axisymmetric variational model

Brittle-matrix composites, Full-cell cracking mode 69

- Bearing strength**
Pultruded glass/polyester, Single-bolt joints 531
- Bending fatigue**
Metal-matrix composites, Continuous fibre reinforcement 235
- Biaxial loading**
Cross-ply laminates, Transverse cracking 84
- Brittle-matrix composites**
Full-cell cracking mode, Axisymmetric variational model 69
- Carbon fibre**
Hybrid, Polyethylene fibre 19
- Carbon fibres**
Surface properties, Active surface area ratio 573
- Ceramic fibres**
Metal-matrix composites, Aluminium matrix 197
- Ceramic laminates**
Cracking, Interfacial toughness 166
- Ceramic matrix**
Crack bridging, Toughening mechanisms 93
- Ceramic-matrix composites**
Metal-matrix composites, Ultimate strength prediction 98
Mechanical and thermal cycling, Fibre/matrix interface 129
Stress/strain behaviour, Fatigue behaviour 157
- Composite materials**
Thermal expansion, Optical metrology 611
- Composite plates**
Symmetric laminates, Plate rigidity 659
- Composite reinforcement**
Ship superstructure, Adhesive bonding 501
Aircraft wing structure, Adhesive bonding 511
- Composite toughening**
Rubber clustering, Hybrid rubber-modification 495
- Composition**
Syntactic foams, Microballoon volume fraction 565
- Compression testing**
Strain rate, Specimen geometry 323
- Compressive properties**
Particulate composites, Relative density 355
- Continuous fibre reinforcement**
Metal-matrix composites, Bending fatigue 235
- Crack bridging**
Ceramic matrix, Toughening mechanisms 93
Metal-matrix composites, Crack growth resistance 122
- Crack creeping**
Interfacial fracture toughness, Four-point bend 103
- Crack growth resistance**
Metal-matrix composites, Crack bridging 122
- Cracking**
Ceramic laminates, Interfacial toughness 166
- Cross-ply adherends**
Adhesive-bonded joints, Modes of failure 475
- Cross-ply laminates**
Biaxial loading, Transverse cracking 84
- Crystallinity**
Interlaminar fracture, Morphology 557
- Damage**
Impact, Fatigue 443
- Damage detection**
Metal-matrix composites, X-ray tomographic microscopy 209
- Damage width**
Post-impact compression testing, Normalized modulus reduction 333
- Deformation and failure modes**
Filament-wound tubes, Indentation 407
- Delamination**
Fabric reinforcement, Shear strength 651
- Dry sliding wear**
Friction and wear behaviour, Sliding velocity 347
- Duplex-coated monofilaments**
Metal-matrix composites, Heat treatment 222
- Elevated temperature**
Environmental testing, Moisture degradation 625
- Environmental testing**
Particulate-reinforced ceramics, Fracture toughness 177
Moisture degradation, Elevated temperature 625
- Extruded polyoxymethylene**
Fracture behaviour, Short glass fibres 643
- Fabric reinforcement**
Delamination, Shear strength 651
- Failure features**
Static fatigue, Water ageing 547
- Fatigue**
Metal-matrix composites, Particulate reinforcement 248
Impact, Damage 443
- Fatigue behaviour**
Ceramic-matrix composites, Stress/strain behaviour 157
- Fatigue crack growth**
Metal-matrix composites, Temperature 214
Metal-matrix composites, Test temperature 241
Metal-matrix composites, Short fibre reinforcement 288
- Fatigue crack initiation**
Metal-matrix composites, Particulate reinforcement 262
- Fatigue crack propagation**
Metal-matrix composites, Stress ratio 229
- Fatigue damage**
Mechanically fastened joints, Fatigue loading 309
- Fatigue loading**
Mechanically fastened joints, Fatigue damage 309
- Fatigue testing**
Glass-ceramic matrix composites, Fracture 150
Metal-matrix composites, Short fibre reinforcement 282
- Fibre composites**
Microstructure definition, Automatic image analysis 383
- Fibre debonded length**
Interfacial shear stress, Applied strain 459
- Fibre debonding**
Fibre/matrix interface, Interfacial shear strength 5
Fibre/matrix interface, Interfacial shear strength 13
- Fibre/matrix interface**
Interfacial shear strength, Fibre debonding 5
Interfacial shear strength, Fibre debonding 13
Ceramic-matrix composites, Mechanical and thermal cycling 129
- Fibre orientation**
Glass-ceramic matrix composites, Angle-ply laminates 141
- Fibre-reinforced concrete**
Mechanical properties, Mix formulation 33
- Fibre strain**
Microcomposites, Stress concentration 635
- Fibre treatment**
Laminates, Resin type 341
- Fibrous composites**
Soviet Union, Review 379
- Filament-wound tubes**
Indentation, Deformation and failure modes 407
- Four-point bend**
Interfacial fracture toughness, Crack creeping 103
- Fracture**
Glass-ceramic matrix composites, Fatigue testing 150
- Fracture behaviour**
Metal-matrix composites, Transition zone 581
Extruded polyoxymethylene, Short glass fibres 643
- Fracture mechanics**
Interface model, Spring elements 467
- Fracture toughness**
Particulate-reinforced ceramics, Environmental testing 177
Particulate-reinforced composites, Mechanical properties 270
Metal-matrix composites, Particulate size 276
- Friction and wear behaviour**
Dry sliding wear, Sliding velocity 347
- Full-cell cracking mode**

- Brittle-matrix composites, Axisymmetric variational model 69
- Glass-ceramic matrix composites**
Angle-ply laminates, Fibre orientation 141
Fracture, Fatigue testing 150
- Heat treatment**
Metal-matrix composites, Duplex-coated monofilaments 222
- Hybrid**
Polyethylene fibre, Carbon fibre 19
- Hybrid rubber-modification**
Composite toughening, Rubber clustering 495
- Impact**
Fatigue, Damage 443
- Impact energy threshold**
Residual strength and modulus, Residual stiffness 457
- Indentation**
Filament-wound tubes, Deformation and failure modes 407
- Interface model**
Spring elements, Fracture mechanics 467
- Interfaces**
Metal-matrix composites, Stiffness loss 187
- Interfacial fracture toughness**
Four-point bend, Crack creeping 103
Vacuum plasma-sprayed coatings, Surface preparation 603
- Interfacial shear strength**
Fibre/matrix interface, Fibre debonding 5
Fibre/matrix interface, Fibre debonding 13
- Interfacial shear stress**
Applied strain, Fibre debonded length 459
- Interfacial toughness**
Ceramic laminates, Cracking 166
- Interlaminar fracture**
Morphology, Crystallinity 557
- Laminates**
Resin type, Fibre treatment 341
Non-crimped fabrics, Tensile properties 423
- Load distribution**
Pultruded glass/polyester, Two-bolt joints 539
- Mechanical and thermal cycling**
Ceramic-matrix composites, Fibre/matrix interface 129
- Mechanically fastened joints**
Fatigue loading, Fatigue damage 309
- Mechanical properties**
Fibre-reinforced concrete, Mix formulation 33
Particulate-reinforced composites, Fracture toughness 270
- Metal-matrix composites**
Notched laminates, Strength prediction 11
Ceramic-matrix composites, Ultimate strength prediction 98
Crack growth resistance, Crack bridging 122
Interfaces, Stiffness loss 187
Ceramic fibres, Aluminium matrix 197
Damage detection, X-ray tomographic microscopy 209
Fatigue crack growth, Temperature 214
Duplex-coated monofilaments, Heat treatment 222
Fatigue crack propagation, Stress ratio 229
Continuous fibre reinforcement, Bending fatigue 235
Fatigue crack growth, Test temperature 241
Particulate reinforcement, Fatigue 248
Reinforcement shape, Reinforcement content 256
Particulate reinforcement, Fatigue crack initiation 262
Fracture toughness, Particulate size 276
Short fibre reinforcement, Fatigue testing 282
Short fibre reinforcement, Fatigue crack growth 288
 α -alumina fibres, ZA12 alloy 437
Transition zone, Fracture behaviour 581
- Microballoon volume fraction**
Syntactic foams, Composition, 565
- Microcomposites**
Stress concentration, Fibre strain 635
- Microstructure definition**
Fibre composites, Automatic image analysis 383
- Mix formulation**
Fibre-reinforced concrete, Mechanical properties 33
- Modes of failure**
Adhesive-bonded joints, Crossply adherends 475
- Moisture degradation**
Environmental testing, Elevated temperature 625
- Morphology**
Interlaminar fracture, Crystallinity 557
- Multiaxial/biaxial fatigue**
Multiaxial/biaxial loading, Test methods 395
- Multiaxial/biaxial loading**
Multiaxial/biaxial fatigue, Test methods 395
- Non-crimped fabrics**
Laminates, Tensile properties 423
- Normalized modulus reduction**
Post-impact compression testing, Damage width 333
- Notched laminates**
Metal-matrix composites, Strength prediction 11
- Oblique end-tab**
Uniaxial off-axis testing, Stress/strain distribution 619
- Optical metrology**
Composite materials, Thermal expansion 611
- Particulate composites**
Relative density, Compressive properties 355
- Particulate reinforcement**
Metal-matrix composites, Fatigue 248
Metal-matrix composites, Fatigue crack initiation 262
- Particulate-reinforced ceramics**
Fracture toughness, Environmental testing 177
- Particulate-reinforced composites**
Mechanical properties, Fracture toughness 270
- Particulate size**
Metal-matrix composites, Fracture toughness 276
- Plate rigidity**
Composite plates, Symmetric laminates 659
- Polyethylene fibre**
Hybrid, Carbon fibre 19
- Post-impact compression testing**
Normalized modulus reduction, Damage width 333
- Pultruded glass/polyester**
Single-bolt joints, Bearing strength 531
Two-bolt joints, Load distribution 539
- Reinforcement content**
Metal-matrix composites, Reinforcement shape 256
- Reinforcement shape**
Metal-matrix composites, Reinforcement content 256
- Relative density**
Particulate composites, Compressive properties 355
- Residual stiffness**
Residual strength and modulus, Impact energy threshold 457
- Residual strength and modulus**
Impact energy threshold, Residual stiffness 457
- Resin type**
Laminates, Fibre treatment 341
- Review**
Soviet Union, Fibrous composites 379
- Rubber clustering**
Composite toughening, Hybrid rubber-modification 495
- Shear strength**
Fabric reinforcement, Delamination 651
- Ship superstructure**

- Composite reinforcement, Adhesive bonding 501
- Short fibre reinforcement**
Metal-matrix composites, Fatigue testing 282
Metal-matrix composites, Fatigue crack growth 288
- Short glass fibres**
Fracture behaviour, Extruded polyoxymethylene 643
- Single-bolt joints**
Pultruded glass/polyester, Bearing strength 531
- Sliding velocity**
Friction and wear behaviour, Dry sliding wear 347
- Soviet Union**
Review, Fibrous composites 379
- Specimen geometry**
Compression testing, Strain rate 323
- Spring elements**
Interface model, Fracture mechanics 467
- Static fatigue**
Water ageing, Failure features 547
- Stiffness loss**
Metal-matrix composites, Interfaces 187
- Strain rate**
Compression testing, Specimen geometry 323
- Strength**
Vinylon-reinforced aluminium laminate, VIRALL 433
- Strength prediction**
Metal-matrix composites, Notched laminates 11
- Stress concentration**
Microcomposites, Fibre strain 635
- Stress ratio**
Metal-matrix composites, Fatigue crack propagation 229
- Stress/strain behaviour**
Ceramic-matrix composites, Fatigue behaviour 157
- Stress/strain distribution**
Uniaxial off-axis testing, Oblique end-tab 619
- Surface preparation**
Interfacial fracture toughness, Vacuum plasma-sprayed coatings 603
- Surface properties**
Carbon fibres, Active surface area ratio 573
- Surface roughness**
Water jet cutting, Abrasive water jet cutting 299
- Symmetric laminates**
Composite plates, Plate rigidity 659
- Syntactic foams**
Composition, Microballoon volume fraction 565
- Temperature**
Metal-matrix composites, Fatigue crack growth 214
- Tensile properties**
Non-crimped fabrics, Laminates 423
- Test methods**
Multiaxial/biaxial loading, Multiaxial/biaxial fatigue 395
- Test temperature**
Metal-matrix composites, Fatigue crack growth 241
- Thermal expansion**
Composite materials, Optical metrology 611
- Toughening mechanisms**
Crack bridging, Ceramic matrix 93
- Transition zone**
Metal-matrix composites, Fracture behaviour 581
- Transverse cracking**
Cross-ply laminates, Biaxial loading 84
- Two-bolt joints**
Pultruded glass/polyester, Load distribution 539
- Ultimate strength prediction**
Ceramic-matrix composites, Metal-matrix composites 98
- Uniaxial off-axis testing**
Stress/strain distribution, Oblique end-tab 619
- Vacuum plasma-sprayed coatings**
Interfacial fracture toughness, Surface preparation 603
- Vinylon-reinforced aluminium laminate**
VIRALL, Strength 433
- VIRALL**
Vinylon-reinforced aluminium laminate, Strength 433
- Water ageing**
Static fatigue, Failure features 547
- Water jet cutting**
Abrasive water jet cutting, Surface roughness 299
- X-ray tomographic microscopy**
Metal-matrix composites, Damage detection 209
- ZA12 alloy**
Metal-matrix composites, α -alumina fibres 437
- α -alumina fibres**
Metal-matrix composites, ZA12 alloy 437
- Abstracts of patents** 59, 369, 451, 595, 662
- Calendar** 63, 375, 527, 598, 664
- Literature survey** 57, 367, 525, 593

